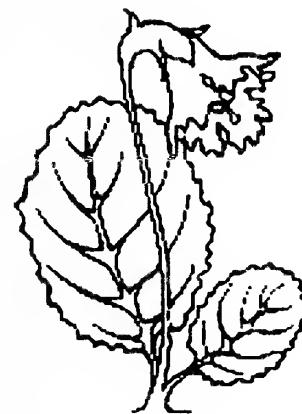


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SHORTIA

NEWSLETTER OF THE
WESTERN CAROLINA BOTANICAL CLUB
SPRING 2009



Shortia galacifolia

Oconee Bells

WESTERN CAROLINA BOTANICAL CLUB

President
Vice President

Juanita Lambert
Frances Jones

Secretary
Treasurer

Cynthia McCurdy
Alan Graham

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From the Vice PresidentFrances Jones

In August, the Mills River was at one-sixth of its normal flow and the French Broad River reached its lowest levels since 1895 when record-keeping began. (Asheville residents were able to walk across sections of the French Broad for the first time in their lives.) Many cattle farmers, unable to grow enough hay, sold off their animals. Apple growers said their rain-stunted apples were small and less profitable.

In February 2009, the southern mountains of western North Carolina remain locked in drought. Groundwater levels are two to five feet below normal. Western NC is today almost as dry as Reno, Nevada and our low soil moisture equals that found in Texas. Hartwell Carson, the French Broad River keeper, has said that if the mountain areas don't get more rainstorms, the French Broad and other rivers will again drop to low levels.

Why are we in this predicament?

I attended a program at the Henderson County Library in which Mike Brewer of the National Oceanic & Atmospheric Administration posited that our drought was caused by an unexplained high pressure system sitting over North Carolina and Tennessee that has been there for the past two years. An article on the internet titled, *La Nina, not Climate Change, Responsible for Southeast Drought* stated that during periods of La Nina, the equatorial Pacific Ocean cools. This affects air currents that in turn impact the jet stream. Douglas Lecomte, of the National Weather Service explains "The downstream effect, like throwing a rock in the stream and seeing ripples, is that high pressure builds up over the southeastern United States, which deflects storms into the north. It's not so good for the south."

Columbia University's Lamont-Doherty Earth Observatory's opinion is that North Carolina's drought is a naturally occurring cyclical phenomenon. The Earth Observatory's conclusions are that the "post-2005 drought" in the southeast is no more severe than earlier droughts; dry conditions are only weakly linked to La Nina; tree rings show droughts in the southeast of equal severity in the past ; the twentieth century appears to have been unusually wet by the standard of the last one thousand years; models vary in their projections of future hydroclimate change; and finally there is no clear signal of anthropogenic climate change in this drought, but, climate change may increase stress on regional water resources.

I guess this adds up to: we don't know why we are experiencing this drought or how long it will last. We can perhaps take comfort in the idea that it is a naturally occurring phenomenon. It would be interesting to study written records of how trees, wildflowers, and North Carolinians fared during previous severe droughts.

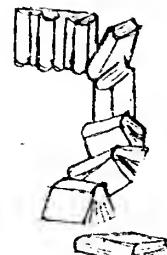
Member News

New Member. Jim Hane is a retired landscape architect. He and his wife moved to this area five years ago from Michigan. They live in Cummings Cove. Jim worked for the Dept. of Natural Resources in Lansing. He is a volunteer at the N.C. Arboretum as a guide in the cultivated garden and at the desk in the Baker Center.

ANNUAL DUES. January 1, 2009 was the date for all membership renewals. This is the final request for renewals. Please fill in all the information on the green form and return it with your check so we can verify our membership records.

Winter Meetings. These meetings will automatically be cancelled if the Henderson County Schools are closed. Check the weather reports or telephone the Henderson County Office at 697-4733.

Book Sale. It is the first day of March and big fluffy snowflakes are filling the sky, a perfect time to sort through the books on my shelves. Before moving to Oregon, Ann Matthes donated several boxes of books from her collection. As you think spring cleaning and sort through your books, put aside any related to botany, gardening or natural science and donate them for the WCBC book sale that will be held at the Annual Meeting in July. Contact Bonnie Arbuckle (696-22077) or Jeanne Smith (885-2530) with donations.



Any change of address, e-mail or telephone number, please inform Alan Graham, 544 Tip Top Road, Brevard, N.C. 28712. 828-884-3947 <adgraham@citcom.net>

FINANCIAL STATEMENT FOR 2008 WESTERN CAROLINA BOTANICAL CLUB

Income	
Dues	\$1,546
Card Sale	27
Donations	88
Total Income	\$1,661

Expenses	
Printing	\$494
Postage	222
Programs	50
Donations/	
Awards	605
Supplies	11
Total Expenses	\$1,382

Income is over expenses	\$ 279
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Submitted by Alan Graham, Treasurer, Western Carolina Botany Club

"Documenting Life" Photo Exhibit

March 2 - 31, 2009 -Asheville

The All Taxa Biodiversity Inventory (ATBI) in the Great Smoky Mountains National Park is getting ready for its ninth field season this year as scientists, students, and volunteers attempt to inventory every species of living organisms. So far they have uncovered 890 species that are new to science and 6,302 species new to the Park. "Documenting Life" is an exhibit that will be on display at The Compleat Naturalist throughout the month of March featuring high-resolution scans of insects and plants from the ATBI project.

The exhibit has been created to showcase the diversity that exists within the park. All of the pieces are beautifully framed, and may be purchased, with 100% of the proceeds benefiting Discover Life in America, the non-profit organization that coordinates the ATBI, documenting the biodiversity of the Southern Appalachians.

To learn more visit www.dlia.org

The Compleat Naturalist, Ltd., 2 Brook Street, Historic Biltmore Village
Asheville , NC , 28803

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2008 Rare Plant List for North Carolina

The "2008 Natural Heritage Program List of the Rare Plant Species of North Carolina" has been completed as is now available for downloading from the NHP website:

www.ncnhp.org/Pages/publications.html<<http://www.ncnhp.org/Pages/publications.html>>

Because of the state budget shortfall, we will not be able to provide bound copies any time soon. If we do get some copies printed in the future, I'll send out an announcement. In the meantime, you can print the list from our web site or download a .pdf file.

-Misty Buchanan, Botanist,NC Natural Heritage Program

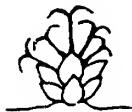
LOOK AGAIN !

The flowers of our native Maples provide us with an interesting subject for study in the spring.

Later in the season we will have no difficulty distinguishing between Red Maple (Acer rubrum) and Silver Maple (A. saccharinum) on the basis of their foliage, but the blossoms emerge very early so this is of no help. They grow in small clusters, each made up of either staminate or pistillate flowers. The two species are superficially similar but have one difference which is diagnostic: Each individual flower of Red Maple has five petals, while those of Silver Maple have none.



ACER RUBRUM



A. SACCHARINUM

In two others--Striped Maple (A. pensylvanicum) and Mountain Maple (A. spicatum)--the situation is reversed. The flowers open later, but although the leaves are then in evidence they are confusingly similar, differing mainly in that the margins are finely toothed in the first species and coarsely serrate in the second. The flowers, however, present no problem. Both are greenish yellow, but those of Striped Maple are $\frac{1}{4}$ " long, bell-like, in pendulous racemes, while those of Mountain Maple are half as long with very narrow petals, and are much more numerous, in slender erect panicles.

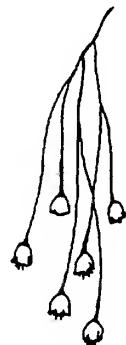


A. PENNSYLVANICUM



A. SPICATUM

Sugar Maple (A. saccharum) has leaves that resemble Red and Silver Maple but have only a few large teeth. Its flowers have pale yellow sepals but no petals, and hang from long, threadlike petioles.



A. SACCHARUM

Dick Smith

EPIPHYTES

Epiphytes are plants that grow above the ground and live attached to other plants. They use the host plant only as a foundation and support. They derive no sustenance from it because they can manufacture their own food by photosynthesis, and so are self-sustaining. By growing on trees as many orchids do, they are better able to reach the light. Over half of the 20,000 species of orchids are epiphytes.

Epiphytes are not to be confused with parasites. Parasitic plants also live on and even inside the tissue of their host but they cannot synthesize organic substances from carbon dioxide and water because, unlike most epiphytes, they have no chlorophyll. To survive, parasites must steal their food from the living tissues of their host. Many parasitic plants are responsible for diseases of crop plants such as the rusts on cereal plants, the brown rot of peaches and anthracnose of beans. Parasites are harmful, epiphytes are harmless.

In northeastern North America, no flowering plants are found to be epiphytes. Occasionally small poplars are found on sugar maples or spruces. These are often referred to as ephemeral epiphytes. Such plants had their seeds disseminated by chance in suitable niches such as knotholes or soil-filled forks of trees. They do not usually complete their entire life cycle in this environment as epiphytes do. Of the many members of the Orchid family which are epiphytic, only a few are seen in the southeast except in Florida. There is one epiphytic orchid found in South Carolina. This is *Epidendrum magnoliae* the Green-fly orchid, which was identified for us by Bonnie Arbuckle on a botany club trip to the S. C. Francis Biedler Audubon Forest in 2001. It was found growing on a cypress tree and was in bloom.



Green-fly Orchid

Although epiphytes are not accustomed to droughts as are other flora because they don't have access to the ground, they do have some mechanisms to survive dry spells. These include the ability to take in carbon dioxide at night, and photo-fixing it during the day to reduce water loss by transpiration. Epiphytic orchids have "pseudobulbs" that store water, bromeliads have tanks of water in the rosette formed by their leaves and philodendrons send long trailing roots down below the canopy which allow them to collect water and nutrients. These plants typically have thick, waxy leaves to minimize water loss.

Mistletoe species are hemi-parasitic, bearing green leaves that do some photosynthesis, and using the host mainly for water and mineral nutrients. Mistletoe species grow on a wide range of host trees and can commonly reduce the growth of the tree, or even kill it with heavy infestation.

An epiphytic orchid made famous by a book
"The Orchid Thief: A True Story of Beauty and Obsession"
is the ghost orchid, *Polyradicion lindenii*. It is a native of southwest Florida and Cuba. In southern Florida it is found on host trees in Fakahatchee, Big Cypress and Corkscrew Swamps. "It is most sought after because of its beauty and because it is impossible to cultivate. The flower is a papery white and blooms once a year. The plant has no foliage --only roots which serve as both roots and leaves. Its lip is especially pronounced and each corner tapers in a long, fluttery tail. Because the plant has no foliage and its roots are almost invisible against the tree bark, the flower looks magically suspended in midair-like a ghost"*



Ghost Orchid
Polyradicion lindenii

Spanish moss, *Tillandsia usneoides*, is not a moss but a member of the bromeliad family, an epiphyte or air plant that has developed a unique way to make its food. These plants have evolved the capacity to process their food from minerals dissolved in water that runs off across leaves and branches of the trees to which they are anchored. Spanish Moss is a flowering plant that reproduces by seeds. In spring the plant has a single yellow-green, fragrant flower on the end of a moss strand. The plant provides protection for insects and is a favorite roosting place for special species of bats. Many think Spanish Moss is a parasite, but instead it is an indicator of the health of the tree on which it is found.

Resurrection Fern, *Polypodium polypodioides*, is an epiphyte common in the southeast and found from Florida to New York and west to Texas. It lives on the branches of large trees such as cypress and live oaks. It gets its name because it can survive long periods of drought by curling up and appearing dead. When just a little water is present, the fern will uncurl and reopen, appearing to resurrect. The club has seen this fern on a tall tree at the end of the woodland trail coming down from the main building at Jackson Park. Another site is along the wooded Coon Branch Trail at the Bad Creek Power Station. Here we get good looks at the fern since it is often seen growing on fallen tree trunks.

*This quotation is taken from a book review which appeared in the Spring issue of Shortia 2002. The book review was written by Botany Club member, Jeanne Smith. She and her husband, Dick, saw the ghost orchid after a muddy search at Fakahatchee Swamp.

Linnaeus and his Apostle, Pehr Kalm

Carl Linnaeus was one of the founders of modern botany. It was Linnaeus's systematic mind that brought order to the rapidly accumulating knowledge of strange plants that resulted from the expansion of European trade to many different parts of the world. His system, based on the sexuality of plants, was a giant leap forward that was crucial in the development of natural science. In *Species plantarum* in 1753, he simplified the naming principle by using only two-word Latin names, as in *Homo sapiens* - the binomial system upon which all biological naming is based to this day.

Linnaeus was a popular teacher at the University of Uppsala, Sweden. He called the students whom he especially valued his "apostles," and he selected from them nineteen men whom he sent abroad on voyages of discovery. Pehr Kalm was sent to the British and French colonies of North America. His goal was to describe the natural products of that part of the world and to find and introduce to Sweden such useful plants as might be expected to thrive in the harsh climate of Scandinavia. It was still believed that climate throughout the world was the same at equal levels of latitude, so that it would be easy to adapt plants found in the corresponding latitude of the French and English colonies of North America for cultivation in Sweden.

Kalm was born in Sweden in 1716 but returned as a five-year-old boy to his family home in Finland, then part of the Swedish kingdom. Kalm was educated at Åbo Akademi in Turku (Åbo) Finland. There he was introduced to Baron Sten Carl Bielke, a friend of Linnaeus and, along with him, a founder of the Swedish Royal Academy of Sciences. In 1740, Bielke invited Kalm to work as supervisor of his estate, Lövsta, in Funbo parish about seven miles from Uppsala, while he also attended lectures at the University. During this time, the two patrons, Linnaeus and Bielke, prepared their young apostle for a journey of discovery to North America.

Kalm left Sweden, accompanied by one assistant, Lars Jungström, in the fall of 1747 for London, where he would be able to board a ship bound for Philadelphia. It took almost a year to get to America. Hostilities between European powers made travel across the Atlantic dangerous, and ships left infrequently. Fortunately, Kalm used his time in England well, studying plants at the Apothecaries' Garden, and making valuable acquaintances with several of the members of the Royal Academy of London who were knowledgeable about plants, agriculture, and America.

Kalm arrived in Philadelphia on September 15, 1748. He soon was befriended by Benjamin Franklin, John Bartram, one of America's first field botanists, and Cadwallader Colden, Surveyor-General of New York. Kalm was amazingly fortunate in the timing of his journey to Canada. Hostilities between England and France had taken place along his 225-mile route the previous year and would soon resume in what Americans called the French and Indian War. Kalm traveled north from Philadelphia through New York City, up the Hudson River past Albany and through what was then a dangerous no-man's land between the British colonies and French Canada.

Kalm was treated as a royal guest by the French government, in exchange for the help that had been given by the Swedish crown some years before to a French scientific party that traveled to Lapland as part of an attempt to define the shape of the earth. Kalm journeyed up the St. Lawrence from Montreal to Quebec with a party led by the royal physician and naturalist, Dr. Jean François Gaultier, who organized the trip to places of interest and helped him to find specimens. In appreciation, Kalm asked Linnaeus to name the genus *Gaultheria* (wintergreen) in honor of his host. Kalm spent the winters of 1749 and 1750 in Swedesboro, then called Raccoon, across the river from Philadelphia in the area that had once been New Sweden, the ill-fated colony of Sweden on both sides of the Delaware River. In March of 1750, Kalm married the widow of the Rev. Johan Sandin, who had been the pastor of the Swedish Lutheran Church in Raccoon.

The following summer Kalm traveled north again to Niagara Falls, via the Hudson to Albany, and then west along the Mohawk Trail to the Iroquois capital, Onondaga, and then to Fort Oswego on Lake Ontario; from there he was taken by canoe to Fort Niagara. Although the purpose of his trip was to obtain plants and seeds, Kalm was greatly impressed by the size and majesty of Niagara Falls and wrote a description of what he had seen to Benjamin Franklin, who published it in his *Pennsylvania Gazette* on September 20, 1750. It was also reprinted in the *Gentlemen's Magazine 37* in London. Kalm's was the first scientifically accurate description of the falls.

Kalm left America reluctantly in 1751; there was still so much to explore and more plants to discover. He returned to Sweden via England accompanied not only by Jungström but by many cases of seeds, specimen plants, two opossums, and a new wife and stepdaughter. In August of that year, Kalm returned to Finland to become Professor of Economics and Natural History at Åbo Akademi in Turku, where he remained for the rest of his life.

Unfortunately, few of the American plants that Kalm brought back to Scandinavia survived, and none were of economic benefit. Despite the failure to accomplish the task that Linnaeus had assigned him, Kalm's travels were of value. He took careful notes along the way, not only about plants and animals, but also how people in the American colonies lived, what they ate, how they built their homes and public buildings, how they worshipped, and how they were governed. Fortunately, Kalm was a very thorough and methodical person and a good observer, and his journal and the resulting volumes that he culled from it have been a treasure trove of information for scholars of colonial America. His journal was an important source book about Canada for a later environmentalist, Henry David Thoreau. Linnaeus named several plants for Kalm, the most important being Mountain laurel, *Kalmia latifolia*.



Paula Ivaska Robbins, a member of WCBC, is the author of *The Travels of Peter Kalm, Finnish-Swedish Naturalist, Through Colonial North America, 1748-1751* (Purple Mountain Press, 2007).



SHORTIA
c/o Anne Ulinski
1212 Chanteloup Drive
Hendersonville, N.C. 28739

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New York Botanical Garden
Bronx, N.Y. 10458-5126

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SHORTIA

A quarterly publication of the Western Carolina Botanical Club

Vol. XXXI No. 1

SPRING 2009

Editor: Anne Ulinski
Editorial Assistant: Jean Lenhart
Member News: Ruth Anne Gibson

Please submit contributions for the next issue by May 15, 2009

The purpose of the Club is to study the plants of the Southern Appalachian Mountains and the Southeast through field trips and indoor meetings. Membership is open to all. Individual/family memberships are \$15. New members joining from the period July 1-December 31, pay \$8. All memberships are renewable on January first of each year. Send dues to: Alan Graham, 544 Tip Top Road, Brevard, N.C. 28812

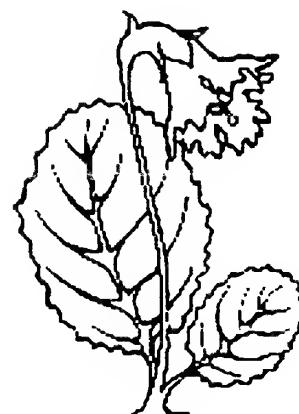


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From the President Juanita Lambert

The Native Woodland Garden at the Bullington Center was conceived as a stylized natural garden showcasing how native flora can be used in home landscaping. Members of the Western Carolina Botanical Club were very active in the initial wildflower plantings in the Garden in 2004, bringing plants from their own home gardens. Nearly thirty species were donated, many in quantity. They also transplanted unique plants from elsewhere on the Bullington property. Near the end of this early stage, a gateway was constructed at the beginning of the trail, formalizing the Garden's entrance.

In 2005, less-desirable woody vegetation of the Garden was thinned out to provide more light and to give the woodland a more spacious and mature feeling. During this time, Botanical Club representation at Bullington consisted primarily of Larason and Juanita Lambert. The Bullington Botanical Bunch formed when Bonnie Arbuckle joined the effort in early 2006.

Bonnie became the defacto leader of the Bunch, with Juanita working closely with her and Larason assisting with the more laborious tasks. After they documented the existing (surviving?) herbaceous vegetation in the Garden, Juanita created plant labels listing the plants' Latin and common names. They also transplanted additional perennials from around Bullington and wherever else they could find them, including their own gardens. Larason rearranged a conglomeration of large rocks into a "rock formation", and planted it with ferns.

Planting in the Native Woodland Garden continued in 2007. As plant material requiring more sun became available, the Bunch's activities expanded to the opening near the Amphitheater, which they enlarged prior to beginning planting. Frances Jones joined the Bunch in 2007 and has been a regular ever since. In late 2007 and early 2008 the Bunch made several trips to a nearby property slated for development, rescuing a number of noteworthy species of bushes and perennials. In order to facilitate watering new plants being transplanted to the Garden, a series of fixed hoses was installed, with outlets at several levels, and during the dry summer of 2008, much time was spent watering the plantings.

During these years, routine weeding and debris clean-up has been a regular part of the Bunch's activities, but it's all done in a spirit of constructive cooperation. The Bullington Botanical Bunch seems to have become a stable entity at Bullington, and its existence may be as much social as it is botanical. If you are at all inclined toward this kind of volunteer activity, we would love for you to join us. We typically work in the Garden for about three hours each Tuesday morning, and then enjoy a picnic lunch together, outside if the weather permits.

Member News

New Members

Ann Ewing was born in Greenville, S.C. and moved to California when she was young. In California she served as a nature guide on a trail designed for the physically disabled. She has been living in Tryon for the last four years. and has designed a training program for the Tryon Garden Club for those members interested in serving as guides at Pearson Falls.

Howard and Linda Jackson live in Asheville. Linda is a retired psychiatrist. Howard and Linda are volunteers with Dr. McCoy at the Bent Creek Institute Germplasma Facility at the N.C. Arboretum. They work two days a week . Linda mounts the dried plant culture and Howard assists with the computers and photography. Howard also serves as a guide in the Segway program .

Mary Clare Jenks has lived many different places but always pursued native flowers where ever she is. She is a passionate gardener and birder. She has been a member of Tryon Garden Club for 15 years. She will be spending three summer months in Canada.

Carolyn Trapp has lived in Wisconsin, California, Colorado, Florida, Montreal, Charlotte and now Arden. In all these places she has been interested in learning the native flora and sharing her knowledge with her children. California presented the most challenge as it was so different from this area. She is glad to be back in the mountains.

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Field Trip Cancellations. On occasion field trips need to be cancelled or changed either for weather conditions or other reasons such as road closings. Such changes are sent out by e-mail to all members at the latest by 7 a.m. the day of the field trip. If you do not have e-mail access, we will try to reach local members by telephone by 7 a.m. If in doubt, contact a leader or co-leader whose telephone number is listed on the schedule. When a field trip is cancelled, no member will be at the contact point.

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Any change of address, e-mail or telephone number, please inform
Alan Graham, 544

Tip Top Road, Brevard, N.C. 28712. 828-884-3947 <adgraham@citcom.net>

Since I missed the spring edition of Shortia, I have a lot of catching up to do.

We started the field trip season with a cold and wet **Hardy Souls Hike** at the Pisgah Ranger Station and it seems to have set the tone for this year's outings - clouds and rain. Despite the weather we had a nice stroll with Gill-over-the-Ground (*Glechoma hederacea*) as the main attraction.

The visit to **Holmes State Forest** presented an all time first in my experience when it was so cold several people left early and no one stayed for lunch! The American Trout Lily (*Erythronium americanum*) tried to put on a show with many blossoms but the cold did not allow them to open fully.

Station Cove and **Baxter Creek** were victims of the weather as both were rained out.

It was warm and sunny for the trip to **Pearson Falls**. The American Trout Lily (*Erythronium americanum*) took advantage of the sun for a brilliant display. Also, the Sharp-lobed Hepatica (*Hepatica nobilis v. acuta*) was in abundance. As is her custom, Millie set out a wide variety of desserts for lunch at her home.

We had another sunny day and a great turnout for the **Twin Bridges Area** walk. The walk on Pacolet Conservancy property produced a lot of wonderful plants including May Apple (*Podophyllum peltatum*) in bloom and Green Violet (*Hybanthus concolor*) in bud. Lunch on the railroad tracks is always an interesting diversion.

The outing at **Glassy Mountain Preserve** was actually quite warm. The rock outcrop plants population has been decimated for some reason. The Painted Buckeye (*Aesculus sylvatica*) was blooming profusely.

The **Jones Property** produced its usual wide variety of plants - the list is six pages and we still found six more plants to add to it! Especially noteworthy was the French Broad Heartleaf (*Hexastylis rhombiformis*) which was in bloom. The Doll's Eyes (*Actaea pachypoda*), which we are used to seeing in seed, were in bloom.

We had a perfect day for the trip to **Pacolet Falls**. The major discussion involved Jeweled Wakerobin (*Trillium simile*) and White Wakerobin (*Trillium erectum*). The former was declared the winner. Lots of other plants in bloom and lunch at the falls is always a treat.

The local weather did not look promising for **Corneille Bryan Nature Center** but the day was jam-packed with native plants (77 different species in bloom) with varied habitats.

We had an outing at the **Givens Estates** for the first time in long while. Wild comfrey (*Cynoglossum virginianum*) was blooming. We are excited when we see one plant at Coleman Boundary! Lots of Southern Nodding Trillium (*Trillium rugelii*) were found.

We closed out this reporting period with a new location - a mountain bog at **Green River Preserve**. It rivaled the Holmes State Forest experience except this was rain, lots of it. Everywhere was a bog even the trail. Blooming Yellow Lady Slippers (*Cypripedium calceolus*) and Vasey's Trilliums (*Trillium vaseyi*) kept it from being a complete washout.

Western Carolina Botanical Membership 2009

Arden	Etowah	Lexington, N.C.
Jackson, Howard & Linda	Barnes, Christine	Fisher, Don
Asheville, N.C.	Charlebois, Joy	Long Boat Key, FL.
Beyer, Patsy	Flat Rock, N.C.	Blackwell, Rusty
Conway, Rachel M.	Arbuckle, Bonnie	Marion, N.C.
Durpo, Wilma	Gibson, Ruth Anne & John	Goldsmith, James W.
Hankins, Diane	Jones, Frances	Mills River
Jackson, Howard & Linda	McCurdy, Mike & Cynthia	Trapp, Carolyn
Hansens, Aline	Greenville, S.C.	Norcross, Ga.
Kolton, Marilyn	Wasson, April	Arrington, Daisy
Lackey, Charlotte	Hendersonville, N.C.	Ormond Beach, Fl.
Middleton, Dave & Milly	Anderson, Ken	McDaniel, Lois
Reed, John	Armstrong, Rebecca	Pisgah Forest, N.C.
Robbins, Paula	Bentley, Glenda	Goldthwaite, John & Sheila
Schuman, Nancy	Bockoven, Paul & Beth	Hauschild, Linda
Siddall, John & Muriel	Borgfeldt, Ken & Chris	Koelling, Karen
Tait, Andy	Collins, Ed	Smith, Helen M.
Black Mountain, N.C.	Dice, Bill & Ann	Spencer, Kim
Feil, Elisabeth	Duncan, Tina	Saluda, N.C.
Bon Air, VA.	Fouts, Carol & Gregory	Pearson, Millie
Verduin, Bill & Evelyn	Gordon, Stephanie	Spruce Pine, N.C.
Brevard, N.C.	Hane, Jim	Gray, Gussie
Farrar, W. Edmund & Carver	Herman, Don & Dana	Stone Mt, Ga.
Graham, Alan	Kirkland, Jean	Lennox, Susan & David
Hudson, Jack & Dorothy	Koch, Barbara	Sewanee, Ga.
Iha, Nancy	Lambert, Larason & Juanita	Drake, James P. (Jim)
Jones, Betty	Lenhart, Jean	Sylva, N.C.
Lellinger, Jenny & Dave	Miller, Don & Linda	Miller, Earl & Bettye
Schifeling, Daniel & Annalee	Montgomery, Bob and Elaine	Stenger, Gloria
Smith, Jeanne	Pearson, Bud & Laverne	Tryon, N.C.
Walls, Harriet	Polchow, Margaret Ann	Jenks, Mary Clare
Woods, Jean	Prim, Lucy and Bob	Travelers Rest, S.C.
Campobello, S.C.	Ulinski, Anne	Prickett, Ema
Ashburn, Carolyn/Hearon, Chuck	Highlands, N.C.	Waynesville, N.C.
Candler, N.C.	Davis, Charlton & Patricia	Couic, Elrose/Hollinger, Sue
Carlson, Betty	Landwehr, Barbara	Fitts, Jackie
Canton, Ga.	Horse Shoe, N.C.	Thomas, Jane
Avery, Larry	Hudelson, Francis	
Canton, N.C.	Humphrey, Pam	
Fishback, H.D. and Jan	Lake Toxaway, N.C.	
Cedar Mountain, N.C.	Allen, Barbara D.	
Steinberg, Aleen	Dziedzic, Betty	
Wilcox, Gail	Landrum, N.C.	
Columbus, N.C.	Ewing, Ann	

My Search for the Illusive Mountain Camellia

I love a good horticulture mystery. A few years ago an Atlanta garden writer published a story that was so intriguing that I could not wait to try to solve it. He wrote that someone in north Georgia had invited him to see one of the most beautiful and rare flowers in the world. It was the mountain camellia. No mention of a botanical name but there were a couple of clues. First, it surely had to be a native, and second it had to bloom in the summer. I went through my collection of books looking for the mountain camellia but as common names are rarely a good way to research. I knew my first job would be to find the botanical name.

As I commonly do when I don't know a botanical name, I either carry a personally dried herbarium sample or a picture of the plant in a jar of water if I think I might be near some learned person who could help me. This time though I only had a common name. I thought there might be a good chance of it being a Gordonia or a Stewartia and after a good read of Dirl's Manual of Woody Landscape Plants, I finally learned the name, *Stewartia ovata*. At least now I knew what I was looking for. Then the search began.

At that time we did not have the privilege of the internet so I went to every specialty nursery and asked everyone I knew if they had the plant and every one tried to sell me a *Stewartia japonica*. All of my friends knew I was looking for a *Stewartia ovata*. For a couple of years I continued my search finally buying three named plants at a reputable nursery that turned out to be *Stewartia japonica* for \$50 each. I gave one to a friend as *Stewartia ovata* so she thought I had finally found this illusive plant. But we both learned soon that we had the most common one in the trade.

Last summer Jackie Fitts, who lives in Waynesville, was reading the paper and saw a picture of the long sought after flower and an article followed that the Land Trust for the Little Tennessee River was going to hike to see it on the following weekend. We were up at daylight and couldn't wait to get there. It was an easy walk and the flower right at eye level was truly one of the most beautiful of all flowers. The most astonishing thing to me was the people on the hike thought of it as pretty common and had it growing in their gardens and offered everyone plants. So my search finally paid off true to my motto, never give up.

-Barbara Allen

Do you want to see this rare flower? The Land Trust for the Little Tennessee has scheduled a trip to see them in bloom on June 26. The site is on Highway 28 about 11 miles north of Franklin. We are welcome to join the group. Send an e-mail to Kate Parkerson at <KParkerson@ltlt.org> for more information. (Kate estimates it will take about two hours to get there.) -Ed.

Stewartia ovata ia a small tree mostly concentrated in the s. Appalachians and interior plateaus of e. KY, south to AL, n. to Georgia and adjacent NC, SC, though also ranging into the Piedmont of NC and the coastal plain of VA. Uncommon to rare over most of its range. -from Ron Lance's "WOODY PLANTS of the Southeastern U.S. (2004) -Ed.

Did You Know?

Last year the United Nations Environment Programme (UNEP) launched a major worldwide tree planting campaign. Under the “Plant for the Planet: Billion Tree Campaign”, people, communities, business and industry, civil society organizations and governments were encouraged to plant at least one billion trees worldwide each year and register them with UNEP.

Now the UNEP has set a new goal of planting 7 billion trees by the end of 2009. The campaign strongly encourages the planting of indigenous trees and trees that are appropriate to the local environment.

In 2008 the Botany Club joined with the Bullington Center in planting a tree for the planet, a cucumber magnolia (*Magnolia acuminata*) on Bullington grounds. The tree was registered with the UN and the site appears on the UNEP worldwide map.

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The traditional way to identify an unfamiliar tree is to pull out a field guide and search its pages for a matching description. One day people may pull out a smartphone instead, photographing a leaf from the mystery tree and then having the phone search for matching images in a database.

A team of researchers financed by the National Science Foundation has created just such a device — a hand-held electronic field guide that identifies tree species based on the shape of their leaves. The field guide, now in prototype for iPhones and other portable devices, has been tested at three sites in the northeastern United States, including Plummers Island in Maryland and Central Park in New York. The computer program compares the leaf snapshot to a library of leaf images.

“We believe there is enough information in a single leaf to identify a species,” said John Kress a member of the research team. “Our brains can’t remember all of these characteristics, but the computer can.” The tree guide will be specific to trees and shrubs of the northeastern United States.

A warning comment came from another scientist who believes in traditional education, too. “People don’t have to take botany for four years, but we shouldn’t lose sight of the value of learning information. If a computer can figure it all out, we can get lazy.”

.....

For the past several years, students from Western Michigan University and the University of Michigan have chosen to participate in an Alternative Spring Break program. This year for two weeks in March, the students helped to restore a Hoke County forest in the N.C. Sandhills by planting 30,000 longleaf pine seedlings.

Hornbeams & Hophornbeams

Carpinus caroliniana and *Ostrya virginiana*

Hornbeams and hophornbeams share many characteristics and often are difficult to tell apart. The following is excerpted from a recent issue of the Georgia Botanical Society newsletter.

Carpinus Caroliniana, American hornbeam, ironwood, musclewood, blue beech, water beech

Taxonomy: American hornbeam is in the birch family (Betulaceae), a medium-sized group of trees and shrubs with 6 genera and about 105 species. Five genera occur in North America: birches (*Betula*), alders (*Alnus*), hornbeams (*Carpinus*), hophornbeams (*Ostrya*) and hazelnuts (*Corylus*). *Carpinus* is the ancient Latin name for hornbeam and *caroliniana* means of North or South Carolina. The tree's name "horn" means tough and "beam" describes the wood which is close-grained, very hard and heavy.

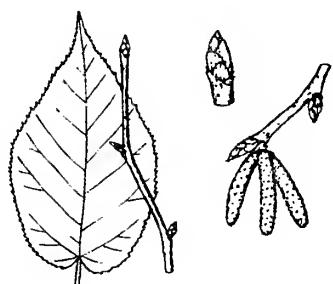
Appearance: A small tree, 20-40 ft. high, up to 2 ft in diameter; short, irregular; often twisted, fluted trunk; crown close, flat-topped with long slender, zigzag branches.

Leaves: Deciduous, alternate, simple, oblong-ovate 2-4 in long, 1 - 1/2 - 2 inches wide, upper surface dark green, dull, mostly smooth with a few hairs along the main rachis, very scattered over rest of surface; main lateral veins prominent, slightly indented; lower leaf surface lighter green, shiny, surface glabrous with appressed hairs only on rachis and lateral veins, leaf margin double serrate, teeth acute.

Flowers: Borne separately on the same tree. Male flower in catkins; female in spikes or short catkins.

Fruit: Nutlet at base of 3-lobed leafy bract; some in a spiral to form a cluster.

Habitat: Mostly understory tree in hardwood forests on moist or wet soils along creeks or rivers. Is an excellent small landscape tree. The Club has identified it at FENCE, Davidson River, Pearson's Falls, Horse Cove, Moore Cove Trail, Green River Cove, Palmetto Trail, Shinn Garden and Paw Paw Cove.



Leaf, twig, enlarged bud at end of twig showing leaf scar and twig scar, enlarged twig with catkins

Ostrya virginiana

Ostrya virginiana, Hophornbeam, American hophornbeam, ironwood

Taxonomy: The hophornbeams are a small genus of only eight species of the birch family ; one species in Mexico, Europe and western Asia; three in eastern Asia and Japan; three in the United States and Canada. *O. virginiana* is widespread in the Eastern U.S. *Ostrya* is the Greek name for a tree with very hard wood. The species name *virginiana* means “of Virginia”. Hop refers to the fruit which resembles hops, and hornbeam refers to the very tough, hard wood,(second in hardness only to dogwood).

Appearance: Small tree, usually 20 to 35 feet high (sometimes up to 70 ft.), diameter 6 to 25 in; large rounded crown and cylindrical trunk.

Leaves: Deciduous, alternate, simple, 2-5 in long, 1-2 in wide, elliptical to ovate. Main veins prominent and much indented in leaf surface; color lime green,dull wrinkled (rugose), more hairy than *Carpinus* with appressed hairs on surface and tangled hairs on rachis. Lower surface only slightly lighter than upper; dull, wrinkled (rugose), prominent interconnecting veins between main lateral veins; lower opposite veins opposite. Leaf base rounded to heart -shaped, tip acuminate; leaf margin single to doubly serrate, teeth acuminate, 3 mm long.

Flowers: Borne separately on the same tree; male in catkins, female in spikes or short catkins.

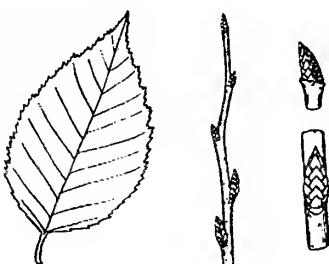
Fruit: Nutlet, borne in a bladdery sac, form a cluster resembling a hop.

Habitat: Slopes and ridges, occasionally in bottoms; usually understory species with hardwoods. Abundant on limestone ridges and slopes. An excellent small shade tree. There are no records that the Club has seen this tree on any field trips.

How to tell them apart::

Hornbeam bark is smooth, dark grey. Fluting trunk looks muscular. Leaves upper surface mostly glabrous, under leaf shiny. Fruit an exposed nutlet.

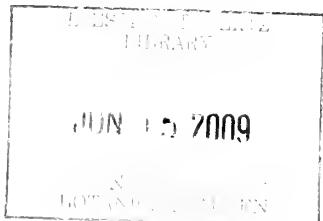
Hophornbeam bark is rough shreddy, flaking and turning loose at free ends. Leaves upper surface wrinkled and hairy. Lower leaf dull. Fruit enclosed by a bladder sac.



Lead, twig, enlarged bud at end of twig showing leaf scar and twig star, enlarged twig with catkins.

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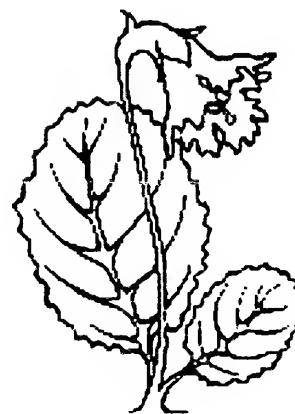
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No. 3
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Fall

SHORTIA

NEWSLETTER OF THE
WESTERN CAROLINA BOTANICAL CLUB
FALL 2009



Shortia galacifolia

Oconee Bells

WESTERN CAROLINA BOTANICAL CLUB

President
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Nancy Iha
Alan Graham

From the President Juanita Lambert

A recent study found that elderly folks derive substantial benefits to their mental well-being by participating in the game of bridge. Evidently it's a very demanding game, requiring you to keep track of who's playing what cards and thereby how you should play your cards to complement what cards you think your partner holds in order to defeat your competitors.

Although perhaps not as demanding as bridge, the complexity of the botanical world presents a challenge to most of us. Each Spring seems to initiate a relearning process of the plants we knew the previous year. How many times have we asked one of our master botanists the genus of a plant as opposed to the common name. And to make things worse, the plant taxonomists keep coming up with new Latin names and shuffling around the taxonomy. In the face of resulting frustrations with forgetfulness, we can console ourselves that all these new names we're learning and associating with visual images of plants and all of their intricate characteristics is likely improving our memories and fighting off senility.

Many of us are also gardeners, and as such, are faced with the tedious task of weeding. But here again arises the need for perception and identification, and in a much more rapid manner as we decide what lives and what dies. Weeding could be viewed as applied botany. And it's sometimes much more demanding, in terms of identification without the benefit of flowers, especially when you're doing it quickly, to be done with the task. It's sort-of like the computer "Pac-man" game, but with multiple kinds of "good guys" and "bad guys". Larason finds that it's a very similar process, but at a much more rapid pace, in trying to save desirable plants while weed whacking. In addition to the mental exercise that weeding gives us, it's good practice for our botanical outings, where many plants are not in bloom. Perhaps we should just slow down and enjoy the weeding as another form of botanizing.

So while bridge might do more for our mental agility, our botanical outings give us the additional benefit of some exercise in our walks, and allow us to experience the beauty and wonder of the plants we encounter and many other aspects of being out in the natural world.

∞ ∞ ∞ ∞ ∞ ∞

Cover: The flower on the cover is *Shortia galacifolia*, Oconee Bells. Our newsletter is named for this southern endemic which is now rare in the wild.

Member News

New Member

Maryke Nol. Maryke Nol is a native of Holland. Now she lives in St. Petersburg, Fla. in the winter and Sherwood Forest in the summer. She became interested in identifying the flowers as she likes to hike and she also likes to read.

.....

Moved

Long time members Bud and Laverne Pearson have moved to Florida. Laverne often volunteered as a co-leader or as a recorder on our weekly field trips.

Bud served for two years as editor of Shortia.

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Book Sale

The book sale which was held at the Annual Meeting netted \$192. Thanks to all who donated books and to those who set up and manned the tables.

.....

Field Trip Cancellations. On occasion field trips need to be cancelled or changed either for weather conditions or other reasons such as road closings. Such changes are sent out by e-mail to all members at the latest by 7 a.m. the day of the field trip. If you do not have e-mail access, we will try to reach local members by telephone by 7 a.m. If in doubt, contact a leader or co-leader whose telephone number is listed on the schedule. When a field trip is cancelled, no member will be at the contact point.

.....

Any change of address, e-mail or telephone number, please inform
our Treasurer, Alan Graham

544 Tip Top Road, Brevard, N.C. 28712. 828-884-3947 <adgraham@citcom.net>

The seemingly constant rain this season caused a stir regarding cancellations. In keeping with the uncertainties of our mountain forecasts we walked on rainy days and sat home on sunny days – go figger'.

The Pilot Mountain walk was replaced with **Pine Tree Loop**, a new walk in the Powhatan area. It rained but a few hardy souls walked anyway and had a good time (so they said). I went on the scout and the most interesting sight was the flip-flops worn by the walk leader.

The walk at **Coleman Boundary** was perfect with just a little overcast to hold down the heat. A wide variety of bloomers including abundant displays of Canada Mayflower (*Maianthemum canadense*) and Wild Stonecrop (*Sedum ternatum*) were found along the way.

The walk at **Davidson River** was modified slightly as we went down the trail past the English Chapel and then over to the Nature Trail. It seemed to be a Hexastylis walk for a while as we saw lots of Large-flowered Heartleaf (*Hexastylis shuttleworthii*) and then Little Brown Jugs (*Hexastylis arifolia*). Bloomers along the way included Puttyroot (*Aplectrum hyemale*) and Gray Beardtongue (*Penstemon canescens*).

We usually are treated to the alien-looking bloom of the Whorled Pogonia (*Isotria verticillata*) on the **Tanbark Ridge to Bull Gap**, but we did not see any this year. However, the Fire Pink (*Silene virginica*) and Flame Azalea (*Rhododendron calendulaceum*) provided a brilliant display of color.

Lewis Creek sort of lived up to it's name as heavy rains during the week turned the greenway into a mini flooded plain. Botanically we were somewhat challenged as lots of grasses and sedges went the "sp" route. We did find one of our species that had not been previously recorded - Pineapple Weed (*Matricaria discoidea*).

The walk at **Heintooga Spur** was warm and sunny. The Small Purple Fringed Orchid (*Platanthera psycodes*) was blooming at several spots on the roadside. Two other species of note included Devil's Paintbrush (*Hieracium aurantiacum*) and Tassel Rue (*Trautvetteria carolinensis*).

We had a clear day at **Whiteside Mountain** so the views from the top were excellent. Leatherflower (*Clematis albicoma*) in bloom at the top of the trail was an interesting find. Several St. John's-wort's including Bushy (*Hypericum densiflorum*), Appalachian (*Hypericum buckleyi*), and Spotted (*Hypericum punctatum*) were just beginning to bloom.

It was a pleasant day at **Bee Tree Gap** and the wildflowers were blooming profusely as usual with the Black-eyed Susan (*Rudbeckia hirta*) especially abundant. A couple of noteworthy plants included Orange Coneflower (*Rudbeckia fulgida*) and Wine-leaved Cinquefoil (*Sibbaldiopsis tridentata*).

The **Shut-in Trail to Mills River Overlook** was one of those "maybe we can beat the rain" days and we didn't! The Starry Campion (*Silene stellata*) was in good bloom along the trail. The rare Fringed Campion (*Silene ovata*) was in bud and lots of plants were found. On a sour note, the invasive Virgin's Bower (*Clematis virginiana*) seems to be taking over a portion of the trail and forcing many natives out.

Did You Know?

The Winners

On July 11, The Carolina Mountain Land Conservancy (CMLC) held an open house celebrating the new 3200 square foot, passive solar, energy efficient and green-outfitted building in Ironwood Square, Hendersonville. In addition to a wine and cheese reception, winners of CMLC's first juried art show were honored.

The first prize was won by Pat Arnett. It was entitled "Botanists at Lewis Creek", an oil painting based on a photograph taken by Ken Borgfeldt on a recent field trip. The Botany Club members in the painting are: Juanita Lambert, Ruth Ann Gibson, Cynthia McCurdy, Kim Spencer, Karen Koelling and Fran Huddleson. Pat is a former Botany Club member who during her membership served as Assistant Editor of *Shortia*.

The second prize was won by Botany Club board member, Lucy Prim. Her water color was entitled "World's Edge". After the morning at Lewis Creek, Ken Borgfeldt took the Botany Club group to World's Edge where they could enjoy the beautiful view which is depicted in Lucy's winning painting. Congratulations to Pat and Lucy.

Chimney Rock State Park

The NC State Parks, the Department of Transportation and the United States Department of Agriculture (USDA) are working together to combat invasive species in Chimney Rock State Park. The nemesis is princess tree also known as Paulownia tree. Princess trees are known by their dangling purple flowers and broad leaves. They may be pretty when in bloom but they grow at an alarming rate and often on steep rocky slopes where they encroach on rare native species. This is the case at Chimney Rock.

"By themselves, the princess trees are bad enough, but they are also giving kudzu ample opportunity to climb into their canopies and develop the characteristic kudzu formations. Eventually this will kill off the native trees and the native ground cover" says Marshall Ellis, mountain region biologist for the Division of Parks and Recreation.

Two native species of concern at Chimney Rock Park are Granite Dome goldenrod (*Solidago simulans*) and Biltmore Sedge (*Carex Biltmoreana*). They have limited ranges in North Carolina and are listed as Federal Species of Concern.

The work, already begun, is expected to be a multi-year project, especially the kudzu removal, but once the trees are down, the kudzu will be easier to treat.

Marshall says. "We anticipate that if we can get the invasive plants reduced, the natives that are already adjacent will reestablish and take the site back".

-From "VIEWS" Chimney Rock State Park, Summer 2009

Let's Look at Lobelias

Late summer and early autumn is the time to enjoy flowering lobelias. Their spikes of vibrant red and blue flowers color damp meadows and stream banks.

Lobelias are members of the Campanulaceae family. Since they are the only genera of this family with zygomorphic or irregular flowers some taxonomists think they should be recognized as a separate family, the Lobeliaceae. The flowers are bilaterally symmetrical. If you cut the flower in half longitudinally each part would be the same. If you cut it horizontally each half would be different. Each flower is two lipped. The upper lip has two erect lobes, the lower lip has three spreading lobes.

The lobelias were named to honor Metthia De'l Obel, an early Flemish herbalist. When he became the personal physician of King James I he anglicized his surname to Lobel.

Cardinal Flower (*Lobelia cardinalis*) and Great Blue Lobelia (*Lobelia siphilitica*) are the most commonly seen species. Both are tall plants with large terminal blossom spikes. They like to grow in ditches and wet meadows. Cardinal Flower was named for the resemblance of the brilliant red flowers to the color of the robes worn by Roman Catholic Cardinals. They attract and are pollinated by hummingbirds and long tongued butterflies—Spicebush and Eastern Tiger Swallowtails. Great Blue Lobelia has dark blue flowers with a white throat. William Bartram wrote that the Cherokee used the root of this plant to treat syphilis. It was not effective.

Indian tobacco (*Lobelia inflata*) is a weedy annual often found in fields and waste places. It has small light blue flowers growing in the leaf axils. When fertilized, the ovary enlarges to resemble a small inflated balloon. Early settlers observed the Cherokee smoking the dried leaves of this plant.

Nuttall's Lobelia (*Lobelia nuttallii*) is a delicate plant with narrow linear leaves. The pale blue 3/8 inch flower has two greenish spots on the lower lip. This infrequently seen plant has been recorded on WCBC field trips to Sky Valley Road, DuPont-Cedar Rock Mountain, Craggy Pinnacle and the Botanical Gardens UNCA.



Nuttall's Lobelia
Lobelia nuttallii

Downy Lobelia (*L. puberula*), Pale Spiked Lobelia (*L. spicata*), Southern Lobelia (*Lobelia amoena*) and Glade Lobelia (*Lobelia glandulosa*) have also been recorded on our field trips. They all have blue flowers. Downy lobelia can be recognized by its hairy stem and one sided inflorescence.

-Bonnie Arbuckle

The Green Salamander

Green salamanders are one of the most unique salamander species in the eastern United States. They represent the only member of the "climbing family" of salamanders (genus *Aneides*) east of the Rocky Mountains. This salamander is distributed from southwestern Pennsylvania south to central Alabama along the Appalachian Plateau with an additional disjunct population found in the southern Blue Ridge Mountains of North Carolina, Georgia and South Carolina. In North Carolina, the green salamander has two disjunct separate populations, one in the Blue Ridge escarpment of Macon, Jackson, Transylvania and Henderson counties, and another in the Hickorynut Gorge area of Rutherford and Henderson counties.

Across their range, these salamanders occupy one of the narrowest niches of any salamander species, residing almost solely in small, moist (although not wet), clean (containing neither sediment nor moss) horizontal crevices in rock outcrops. They are also infrequently found residing and/or foraging in trees.

Adult green salamanders typically measure from 8-14 cm long and are specifically adapted to their rocky homes. They are easily identified by the greenish lichen colored patches on their flattened black body. Within North Carolina they usually occur in moist mixed deciduous forests between 290m and 1340m elevation.

From the early 1970's, populations of the green salamander have declined by 98% and prompted the U.S. Fish and Wildlife Service in 1987 to review the status for Endangered Species protection. However that designation was denied and the disjunct population is now a "Species of Concern". In N.C. they are considered endangered, in S.C. a "Species of Concern" and in Georgia "rare". None of these offer any legal protection.

Wild South is working with the N.C. Wildlife Resources Commission monitoring populations and surveying new sites for potential populations.

Excerpted from 'Wild South Quarterly' Summer 2009

Wild South's home office is Asheville, N.C.

Corrected Illustrations and captions from the Hornbeam article
in the Summer Shortia

Carpinus Caroliniana, American hornbeam, ironwood, musclewood.

Leaf, twig, enlarged bud leaf at end of twig,
enlarged flower bud and leaf scar.



Ostrya virginiana, Hophornbeam, American hophornbeam, ironwood.

Leaf, twig, enlarged bud at end of twig,
showing leaf scar and twig scar, unlobed
twig with catkins.



Toward Pisgah

Of world we make
the mind and it
becomes
all we know

and the actual real
lies always still

beyond the horizons
of our words
our dream of world

lost if not engaged,

but easily unseen, lost
in another way,
in the encounter.

Elevated Pisgah
by earth's energy
the tellurian collisions

now a mile high - not
great as mountains go -

no Sagarmatha -
but eons older, and
in its own
range, the ridge
in which it was
cast up
has its own presence.
Its peak defines
its particularity, and
its mass merges with
more north
south and west
to define its own
high country:

Nantahala,
Cullasaja,
Tuckasege -
no matter which way
descended from its
slopes
the rivers gather in one
direction: West.

-Jeff Davis

Sagarmatha is Sanskrit for
"Sagar = sky and matha =
forehead or head " and is the
modern Nepali name for Mount
Everest.

Green River

There must be
water to open the earth
to the digging
root, to ease its entry
deeper.

Here, it wore the land
hollow.
Low willows
watch water slip
over stones
through thick

rhododendron,
tree-rose, kalmia,
laurel wood.

This was your river,
Lady of the Rivers,
when I came to you lost
in my own thicket of
mind's perplexity,
and you bathed me
in the torpor of a
vivid sleep,
anointed me, joined me
to the body of the land
your river passed through,
took me beyond
myself, and the argument
I let die as it mingled
with the cool air, lost
among the leaves.

You
Lost Agisegwa.

And still
the water
that she was remains
to find its way always
down through the scattered
stones of her forgotten
sanctuary,
creek to river,
to ocean, there raised
up to spirit once more, into
the moving aether, to fall
on these hills as rain,
opening the soil,
sustaining by her stream
the oaks, the rose
tree, lichens, moss, and all
below.

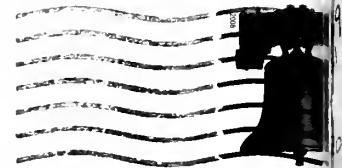
-Jeff Davis

Agisegwa is the "Great Lady"
(or "great female") of the
Cherokee. She wasn't a river
goddess, so far as we know, but
serves as one here.

Jeff Davis grew up in Charlotte, North Carolina, received degrees from UNC Chapel Hill and the State University of New York. He apprenticed from 1972 to 1975 to a native carver of ceremonial masks and totem poles in Alert Bay, British Columbia. He returned to N.C., settled in Asheville, and taught Anthropology and History classes at UNC Asheville for a decade. In July he read some of his poems In Hendersonville during the StoryTelling weekend.

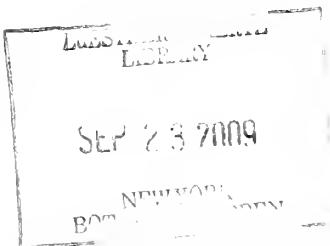
These poems are reprinted with his permission from his book "Natures/Selected Poems 1972/2005"

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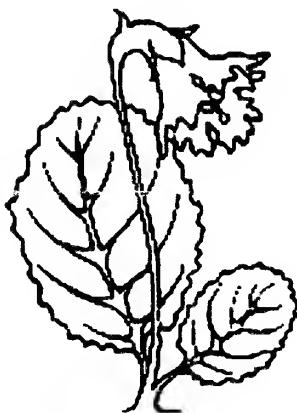
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SHORTIA

NEWSLETTER OF THE
WESTERN CAROLINA BOTANICAL CLUB
WINTER 2009



Shortia galacifolia

Oconee Bells

WESTERN CAROLINA BOTANICAL CLUB

<i>President</i>	<i>Juanita Lambert</i>	<i>Secretary</i>	<i>Nancy Iha</i>
<i>Vice President</i>	<i>Frances Jones</i>	<i>Treasurer</i>	<i>Alan Graham</i>

From the President Juanita Lambert

At the risk of preaching to the choir, I want to take this opportunity to encourage WCBC members to place great emphasis on growing native plants in ecologically-compatible plant communities on their properties. More than five years ago, Bonnie Arbuckle described the pleasures of growing native plants in her yard, and encouraged WCBC members to enjoy such pleasures. I would go a step further, and suggest that we have an obligation, as tenants of the land, to maintain it in as natural a state as we can while using it for our needs.

The inspiration for this belief came from an article in "Green Scene", a bimonthly publication of the Pennsylvania Horticultural Society. This article, "We Don't Garden Right", was adapted from a speech by Sara Stein at the 1994 Landscaping with Native Plants Conference in Cullowhee. The following thoughts and concepts derive directly from that article.

Our cultural history has bestowed upon us the right to "own" the land, but along with that right goes the responsibility of good stewardship. Even with good intentions, we can sometimes make changes that disrupt the natural continuity of life on our properties. Probably most things we do to make our properties neater or more attractive have a negative impact on the ecology of the site. The natural world is rather unruly and chaotic, to our way of thinking, but that's because it's more complex than we can easily imagine. Especially in a lush climate like the Southern Appalachians, ecological interactions are extremely complex, ranging from the largest trees down to the tiniest micro-organisms, and anything we do to one facet of the ecology affects many other facets. By favoring certain plants we prefer, and by pulling weeds, we disrupt the ecology. Lawns are perhaps the most unnatural of plant communities.

The use of herbicides and pesticides creates the most disruption, destroying countless species of the natural ecosystem. The irony is that all of our efforts to create pleasing environments on our properties consumes so much of our time when we need only learn to appreciate the natural ecosystem we inherit, and just concentrate on keeping out the invasive exotic species. Do any of us have the strength of character to let our land go "natural"?

The National Wildlife Federation has a Backyard Wildlife Habitat program that addresses many of these concerns and gives some ideas for getting started. You can google it. I can provide photocopies of Sara Stein's article (give me a call), and Ms Stein has written several books on habitat restoration (google her).

Member News

ANNUAL DUES. January 1, 2010 is the date for all membership renewals. Please fill in all the information on the green form and return it with your check so we can verify our membership records.

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Winter Meetings. These meetings will automatically be cancelled if the Henderson County Schools are closed. Check the weather reports or telephone the Henderson County Office at 697-4733.

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Our President, Juanita Lambert, will be away from Christmas until mid-March. Frances Jones, who is Vice-president, will be taking Juanita's place.

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Any change of address, e-mail or telephone number, please inform
our Treasurer, Alan Graham

544 Tip Top Road, Brevard, N.C. 28712. 828-884-3947 <adgraham@citcom.net>

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Field Trip Cancellations. On occasion field trips need to be cancelled or changed either for weather conditions or other reasons such as road closings. Such changes are sent out by e-mail to all members at the latest by 7 a.m. the day of the field trip. If you do not have e-mail access, we will try to reach local members by telephone by 7 a.m. If in doubt, contact a leader or co-leader whose telephone number is listed on the schedule. When a field trip is cancelled, no member will be at the contact point.

Inclement weather was a minor problem as we closed the outdoor season for the club. Two walks were canceled.

The Bear Pen Gap Trail has been torn up in the interest of keeping motorized vehicles away from the blueberry patch. Plants of note seen included the Small Green Wood Orchid (*Platanthera clavellata*) and a nice stand of Featherbells (*Stenanthium gramineum*).

We walked the Gray Beard Mountain Overlook to Glassy Mine Overlook in the opposite direction from normal and found out why we don't do it that way - it's all up hill!! Despite the mumbles from the back of the line, we found Purple Bergamot (*Monarda media*) and Wine-leaved Cinquefoil (*Sibbaldiopsis tridentata*). The vistas from the meadow area were interesting due to the low cloud cover.

We had perfect conditions for our visit to Sky Valley Road. In addition to dodging the road grader, we found Nuttall's Lobelia (*Lobelia nuttallii*) and Thread-leaved Gerardia (*Agalinis setacea*). One disappointment was that we were too late for the Yellow Fringed Orchid (*Platanthera ciliaris*).

The walk on Furman University Campus was a new area for us. We started the walk observing the Dawn Redwood (*Metasequoia glyptostroboides*). The Strawberry Tree (*Arbutus unedo*) had some unusual fruit. The gardens provided interesting plants not usually seen.

We followed the Furman walk with another new walk - Big Ridge to Stony Bald. This was one of those "it won't rain but it did!" We only walked in part way and then returned to the cars so we didn't make Stony Bald. The Striped Gentian (*Gentiana villosa*) was particularly impressive.

The Parkway South outing started sunny at Wagon Road Gap but became cloudy as we worked our way to Wolf Mountain Overlook. We found an abundance of Grass-of-Parnassus (*Parnassia asanifolia*) in bloom. The endangered Sticky Asphodel (*Tofieldia glutinosa*) is doing quite well since it was relocated from the ditch area.

The picnic at the Herrman's Ramblewood was its usual success. Dana led a walk of the trails and the food was delicious.

We had a long walk to the Wintergreen Falls in DuPont State Forest. The abundant rain all summer produced an excellent water display at the falls. Fine-leaved Sneezeweed (*Helenium amarum var. amarum*) was a plant of note.

The trip to Coon Branch Trail produced some great water displays and fall colors. We saw Beech Drops (*Epifagus virginiana*) and a Ladies' Tresses (*Spiranthes sp.*)

We celebrated the Halloween season by going to McCall Cemetery in Pisgah Forest. The growing season was winding down so fruit and seeds were the norm.

Kim Spencer invited everyone to her home for a Moss Workshop, the first for the club. Bonnie Arbuckle led an introduction into moss identification by describing a genus and then the group tried to find it on Kim's moss wall. A good effort but we need more work!

"Landscaping & Gardening with Native Plants"
The Highlands Biological Foundation, Inc. Tenth Annual Conference
and Plant Auction

September 2009

Our program started on September 10th with full-day field trips to visit the Southern Highland Preserve with Jim and Bethany Plyer, and Panthertown Valley with Wes Burlingame. Also available were choices from eight half-day events which varied from workshops on propagating heirloom fruits and vegetables, Monarch butterflies, and field trips to botanize on Whiteside Mountain, or visit local gardens designed with native plants. I visited three gardens in the Highlands area. Each was unique in design and plant material, and all offered fresh ideas and sparked the urge to go home and work in my own garden.

The trips were followed by refreshments and a short tour of the Biological Station and Botanical Gardens. The evening program, "The Southern Appalachians: A Dynamic Landscape" by Katherine Elliott, a research Scientist at Coweeta Hydrologic Lab, included information on the events that shaped the plant species diversity in our area.

The second day started with a talk by John Turner, Director of the Southern Highlands Reserve in Lake Toxaway, N.C. His pictures of the before and after of six years of garden-building were amazing.

The next presentation, "Personal Space: The Importance of Private Property in Conservation" was by Patrick McMillan. We are all familiar with botanist McMillan from Clemson University, his wonderful TV series, and his talks to the WCBC. His talk was inspirational. How could a person not be inspired to be a better guardian of their own property after hearing it. .

The afternoon programs were "Seeds of Persistence", by Jim Veteto of the University of Georgia (an overview of the southern Appalachian's high diversity in agriculture), and a talk , "Water Conservation in the Garden." by Jon Caladeria of the NC Arboretum and the Upper French Broad Watershed Training Program coordinator. This was especially timely after several years of drought in our area.

The conference ended with a wine reception and native plant auction. This was really fun and a good way to end the day. The three of us from Brevard acted as monitors for each other so although we made purchases no one went crazy at the auction ... or drank too much wine.

-Nancy Iha

The Connecticut Botanical Society

Quoting from the Connecticut Botanical Society (CBS) website, it is "a group of amateur and professional botanists who share an interest in the plants and habitats of Connecticut and the surrounding region. The society was founded in 1903. Our goals are to increase knowledge of the state's flora, to accumulate a permanent botanical record, and to promote conservation and public awareness of the state's rich natural heritage."

Home-based in New Haven, CT, the CBS hosts weekly field trips during the growing season. These field trips are held throughout the state and are mostly led by botanists. The Society also offers workshops, publishes a quarterly newsletter, maintains its own herbarium, (which contains more than 36,000 sheets), and shares through the internet a "must see" website that was established in the year 2000, and is still currently maintained by Janet Novak. It is one of my favorites! Definitely bookmarked! Take a minute to peruse it (<http://www.ct-botanicalsociety.org/index.html>) and you will see why.

Amazingly, because of our elevation and relatively cool temperatures in the Southern Appalachians, despite our latitude, our floras have a lot in common. You can search their extensive collection of wildflower information and photographs by color, scientific name, or common name. They provide synonyms for both common and scientific names. Their photography of both wildflowers and ferns is superb. Their images usually provide very good detail, and often include additional photographs that highlight diagnostic characters. The information for each plant includes family, habitat, height, flower size, flower color, flowering time, origin, and may include significant features or notes.

The website includes a section on Rare Plants, Gardening with Native Plants, and a developing section on Plant ID Guides. The latter displays a great guide by Arieh Tal that provides a table designed to identify common Goldenrods. I printed it this past summer to carry along with me to help me out with this confusing group of plants and found it a useful supplementary source.

The CBS is a volunteer, private, non-profit organization that supports and publishes research, and provides educational programming. All for the modest membership fee of \$15 per individual, or \$20 per couple! How do they do it? Preparing this piece for Shortia made me wish that I could sometimes be a little bird so that I could fly there and back to tag along on some of their field trips!

-Jenny Lellinger

NEW BOOK

Paula Robbins' latest book, *Jane Colden: America's First Woman Botanist*, will be published by Purple Mountain Press in October, in time for Christmas gift-giving. Paula will have copies available or they can be ordered from the publisher or Amazon on line.

In eighteenth century America, "A female botanist was a rare thing to contemplate," according to Raymond Phineas Stearns in his 1970 compendium, *Science in the British Colonies of America*. The daughter of the colonial lieutenant governor of the colony of New York and a naturalist well known to the international circle of botanists, Jane Colden became her father's protégé. She corresponded regularly, exchanging information about plants with several of her father's friends. Jane produced an herbal describing in both words and drawings 341 plants that grew in and around her father's 3,000-acre estate west of Newburgh, New York. The manuscript now resides in the Natural History Museum in London.

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FLIGHTY OAKS

In the National Arboretum's parched herbarium, where dried plants date back to the 1790's, Ian Whitemore is providing needed acorn perspective. A year after few acorns fell in parts of the U.S., the botanist says hungry squirrels and an anxious press—which breathlessly wondered, Is it climate change?—can relax.

Oak trees, he explains, don't have regular cycles or produce big harvests every year. Factor in weather—cold, wet springs impair pollination, hot, dry summers hinder maturation—and you've got acorn variability.

UCLA botanist Victoria Sork concurs. Back in the 1980s she tallied two near-zero years in eastern Missouri. The next fall? A bumper acorn crop. "We have to be careful about reading too much into one year." she says.

Meantime, says botanist Rod Simmons, the next boom year will be a boom year for all. One huge oak can drop up to 10,000 acorns, so well-fed squirrels are likely to hoard and forget their leftovers - and thus plant trees far and wide.

-Jeremy Berlin
"National Geographic"
November 2009

Three Mycotrophic Wildflowers

On October 25 of this year, Louise Bailey wrote in her column in the Hendersonville Times News, "In late August and September, keep your eyes open for the little plants the botanist Linnaeus classified as *Monotropa uniflora*. We call them Indian pipes."

Dick Smith in his book "Wild Flowers of the Southern Mountains" uses the common names Indian Pipe or Ghost Flower for this same species. Ghost is often used as the common name for Indian pipe because the plant does not produce chlorophyll and is mostly colorless. Dick also lists another similar plant in our area, *Monotropa hypopithys*, Pinesap. The club has identified both Indian Pipes and Pinesap in the past. Emily Dickinson called the Indian pipe "the preferred flower of life."

Monotropsis odorata, Sweet Pinesap is still another mycotrophic. It has seldom been reported in our mountains but a small population was reported recently in the Dupont Forest area this September. The specimen that was found had brown-purple coloration, was in bud, and had no distinguishable odor at the time of its discovery. *Monotropsis odorata* is listed as threatened in Kentucky and Tennessee; endangered in Florida and Maryland. It is ranked G3, vulnerable, by NatureServe.

In Alan Weakley's "Flora of the Carolinas, Virginia, Georgia and surrounding areas" "Sweet Pinesap is listed as rare in N.C. Alan writes "the flowers are very fragrant, the odor variously described as similar to cloves, nutmeg, cinnamon, and violets." As with the two others, Sweet Pinesap receives its nutrition by association with mycorrhizal fungus, the intertwined root mass and fungal mantle. It is sometimes called Carolina Beech-drops.

Sweet pinesap was listed by botanist Chick Gaddy in his inventory of the Natural Areas of Henderson County (1994). It appears under the heading "Rare, Noteworthy, and Disjunct Species."

In the past, mycotrophic plants were often called saprophytes. The word mycotrophic better describes the relationship between these plant species and the soil fungi living in and around their root systems. Mycotrophic plants do not produce chlorophyll and are dependent on the food energy they absorb from the decaying tissues which they help break down.

To see pictures of these plants, go to the web page:

<http://www.fs.fed.us/wildflowers/interesting/mycotrophic/whatarethey.shtml>.

DNA Barcoding

On November 10-11, the Consortium for the Barcode of Life (CBOL) hosted a conference in Mexico City to discuss the new science of DNA barcoding. "Biodiversity scientists are using DNA technology to unravel mysteries, much like detectives use it to solve crimes," said David Schindel, executive secretary of CBOL. The conference was held at the Mexican Academy of Science with the Biology Institute of the Autonomous National University of Mexico. CBOL's Plant Working Group consists of 52 scientists from 10 nations.

At the meeting the International team of scientists agreed on a standard "DNA barcode" for plants that will allow botanists to identify species quickly. They hope the agreement will lead to the formation of a global plant DNA library, which can be shared by the scientific community.

"Identification is important," said lead author Dr. Peter Hollingsworth, head of genetics and conservation at the Royal Botanic Garden, Edinburgh, Scotland. "It is the link between a given plant and the accumulated information available for that species."

DNA is a complex molecule containing all the genetic instructions for any organism to develop. While the DNA of a human is different and more complex than that of a worm, mouse DNA is quite similar to human DNA. While different areas of DNA have been identified that serve as the barcode regions for birds and for insects, plants have remained elusive, in part because there are an estimated 400,000 species of flora.

CBOL scientists say they can now compile a database of all known plant species with their unique barcodes, which can be utilized as a sort of global reference library. In the near future, inspectors will be able to take a small sample from raw logs or lumber and determine if it is from illegally harvested trees. And they add, it will help in identifying the illegal trade in endangered species.

However, a November 4, 2009 report on "DNA "barcode" for tropical trees shows that "while the identification of plant species has improved considerably, some aspects of this method remain problematic, especially for tropical species." The study was made at a French Guiana research station. So the story of DNA-Barcoding will continue.

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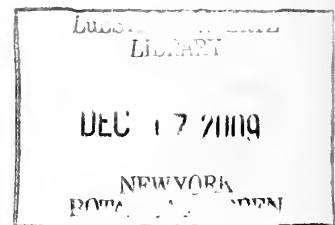
Most of the above information was from reports made by the science and environment reporter, BBC News.



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FIRST CLASS

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Editor: Anne Ulinski
Editorial Assistants: Jean Lenhart, Kim Spencer
Member News: Ruth Anne Gibson

Please submit contributions for the next issue by February 15, 2009

The purpose of the Club is to study the plants of the Southern Appalachian Mountains and the Southeast through field trips and indoor meetings. Membership is open to all. Individual/family memberships are \$15. New members joining from the period July 1-December 31, pay \$8. All memberships are renewable on January first of each year. Send dues to: Alan Graham, 544 Tip Top Road, Brevard, N.C. 28912